

SIMPLY MILES AHEAD

YORK TRANSPORT EQUIPMENT PTY LTD

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***YORK TRAILER AXLE
SERVICE MANUAL***

YORK TRANSPORT EQUIPMENT PTY LTD

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SERVICE INFORMATION & WARRANTY CONDITIONS

York Trailer Axles

York trailer axles are guaranteed for one year against faulty parts and workmanship. However, attention to the following is crucial to that warranty:-

- (i) No York axle should be loaded to more than the design load of 10 tonnes or the design load agreed to by York (in writing) for any particular application.
- (ii) York axles must not be operated with the brake torque (chamber size and lever length) in excess of the Australian Design Rule compliance for that trailer.
- (iii) All welding to York axle beams should be carried out strictly in accordance with York's technical specifications.
- (iv) At point of manufacture, York have adjusted the wheel bearings in accordance with York's technical specification. This must be checked at the first 5000 Km service and readjusted, if necessary, to be within this range.
- (v) York have marked the outer nut at the spindle keyway to provide a reference to the initial factory setting. When the bearings have been readjusted the mark might not be at the keyway, this will be because of the bearings "settling in" during the initial service period. The locknut must be re-torqued to 340 to 400Nm each time the bearings are rechecked.
- (vi) Operation of York axles in correctly specified applications, with regular inspection adjustment and lubrication is vital to ensure maximum life of all components and to comply with York's warranty conditions. The enclosed Service Information Data sheet sets out the minimum servicing requirements.

YORK TRANSPORT EQUIPMENT PTY. LTD.

BRENDAN DULLARD
Director & General Manager

YORK TRAILER AXLES

First 500 Kilometres.

Check tightness of all wheel nuts	- On delivery. - After wheel changes.
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NOTE: Recommended torque settings, dry threads (the use of power tools for torque settings is not recommended).

1. WHEEL NUTS.

WHEEL NUTS.	- (Note: 1ft/lb = 1.36Nm)
ISO M22 studs	- 550/600 Nm
ISO M24 studs	- 650/750 Nm
BSF 7/8" BSF studs	- 475/540 Nm
DIN 22mm studs	- 515/540 Nm
Japanese M20 studs	- 400/440 Nm
Japanese M24 studs	- 650/750 Nm
Spider Hubs 3/4" UNC	- 200/260 Nm

2. CAMSHAFT BRACKET SETSCREWS.

M12 - 90/100 Nm
M10 - 30/35 Nm
Lubricate camshaft grease nipples using EP2 grease.

1st Service / 5,000 Km.	- Full bearing adjustment.
1st & every 5,000 Km.	- Check and adjust brakes and check brake linings for wear.
Every 25,000 Km.	- Lubricate slack adjuster and camshafts using EP2 grease or equivalent. Rotate wheels and check wheel bearings to ascertain if there is excessive bearing movement. Readjust as necessary.
Every 100,000 Km.	- Remove hubcaps, inspect bearings and lubrication. Readjust and re-torque the outer nut, resecure lock tabs. - Visually check the axle and ancilliary components for cracking, damage and wear. Repair or replace as necessary.
Every 300,000 Km.	- Remove, wash and inspect wheel bearings, replace if necessary. When re-assembling, bearings must be properly lubricated and adjusted to York's specifications. <u>IMPORTANT NOTE</u> - If the operating service conditions are severe, this procedure may be required at more frequent intervals.

BEARING LUBRICANTS: GREASE - Mobil HP or equivalent.
OIL - Mobil 85W/140 or equivalent.

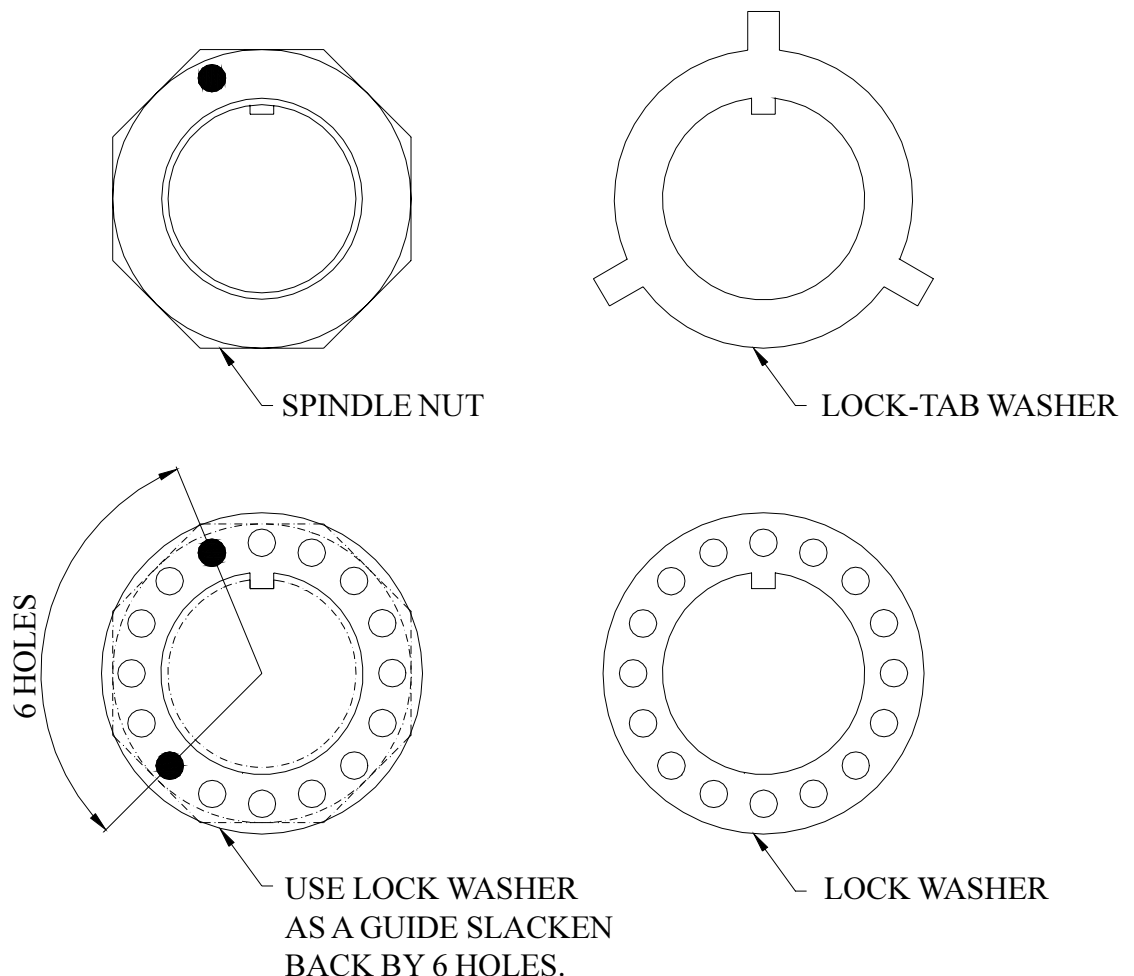
YORK TRAILER AXLES

Wheel Bearing Adjustment.

We recommend that all axles should have the wheel bearings adjusted initially after the first 5,000 km and then at 100,000 km intervals. This does not preclude the need for inspection and adjustment as necessary every 25,000 kms if service conditions require this.

The recommended wheel bearing adjustment procedure is:-

1. Make sure that the hub revolves freely and if necessary temporarily slacken off the brake adjustment to ensure complete freedom from brake binding (drag).
2. Rotate the hub in both directions at the same time tightening the bearing adjusting nut. Continue until a binding is felt and a torque setting of 150/170 Nm is reached.
3. Using the lockwasher as a guide, slacken the adjusting nut back 6 holes and refit the lockwasher. Fit the lock-tab washer. Taking care that the adjustment is not disturbed, fit and tighten the axle locknut to 340/400 Nm.
Check that the hub and drum rotates freely. Bend the tabs on the lock-tab washer over to prevent the locknut coming loose in service.



IMPORTANT: CHECK END FLOAT IS 0.08mm TO 0.20mm. IF NOT, READJUST.



Con Met PreSet Hubs.

Note: PreSet hubs are designed for extended service without any maintenance. If circumstances (overhaul, accident, abuse etc.) indicate service is required, PreSet hubs should be serviced with the close tolerance bearings indicated on the "Part Number Identification" chart. In the event that these bearings are not available, standard bearings can be used by following the conversion procedure below.

IDENTIFICATION: See "Part Number Identification" table on page 7.

HUB MAINTENANCE:

1. Thoroughly clean and inspect any hub that has been removed for service. Discard used seals and gaskets. Use new seals and gaskets on reinstallation and replace worn or damaged parts.
2. Clean and inspect the wheel bearings, spacer and hub each time the hub is removed or when contamination is evident. If a bearing, cup or spacer needs to be replaced, replace all bearings and cups. See "Bearing Cup Replacement" under "Hubs with Manually Adjusted Bearings." Also, replace the spacer if it shows signs of damage. See the "Part Number Identification" chart for part numbers.
3. If, in case of emergency field repair, the PreSet hub bearings as listed in the identification chart are not available, your PreSet hub can be easily converted (see "Conversion Procedure" below) into a conventionally manually adjusted hub and bearing set by removing the spacer. Be sure to follow the manual bearing adjustment procedure (see "Specifications") if you convert your PreSet hub to the manually adjusted system.
4. For additional service information, see the required topic under "Hubs with Manually Adjusted Bearings".

CONVERSION PROCEDURE:

If any parts identified as manual adjust parts are used to service a PreSet hub follow the procedure below.

1. Remove the tubular spacer from the assembly. It is not used when the bearings are manually adjusted. Save the tubular spacer so the hub can be converted back into a PreSet hub.
2. Assemble the hub onto the spindle as a conventional hub and bearing assembly, as described in the section "Hubs with Manually Adjusted Bearings."
3. Use a spindle lock nut system as used on manually adjusted hubs to establish the bearing adjustment.
4. To return the hub to Preset configuration, replace all manual adjust cups, cones and seal with the PreSet parts listed in the "Part Number Identification" chart. Next, install the hub with the spacer following the instructions for "Installation" on page 7.

Hubs with Manually Adjusted Bearings.

HUB MAINTENANCE:

1. Clean and inspect the wheel bearings and seal bore each time the hub is removed or when contamination is evident. Replace damaged bearings and cups as a unit (see "Bearing Cup Replacement").
2. See axle manufacturers publications for lubrication requirements and bearing service intervals.

Wheel Stud Removal

DETERMINATION OF DAMAGED WHEEL STUDS:

1. Replace wheel studs that have damaged or distorted threads, are broken or bent, or are badly corroded. Also, replace the stud either side of the stud being replaced due to damage. If two or more studs have damage, replace all the studs in the hub.
2. Always use appropriate safety equipment and take appropriate safety precautions for the job. Safety glasses, gloves, ear protection etc., will be necessary depending on the equipment and process.

WHEEL STUD REMOVAL:

1. Place the clean hub on a press with the hub supported evenly around and adjacent to the stud being removed.
2. Be sure the hub supported so that it will not tip when force is applied to the stud. Then press the stud out of the hub.

The configuration of some hubs is such that it is impractical to have supports that will prevent the hub from tipping when force is applied to the stud. If that is the case, support the hub on wood blocks on the floor and use a hammer to drive the studs out with several sharp blows. Be careful to avoid damage to the hub, particularly to the seal bore and ABS ring.

Wheel Stud Replacement

1. Check stud length to verify that the stud stand out will be correct.
2. To install a new stud, support the hub evenly around and adjacent to the stud being installed.

Caution: Some studs have a flat edge on the head. Be sure that the edge is line with the groove or shoulder on the head.

3. Press the new stud all the way into the hub. Be sure the stud is fully seated and that the stud head is not embedded into the hub.

WARNING! If the stud head is embedded into the hub, the hub should be replaced.

Bearing Cup Replacement

1. Separate the hub from the spindle and wheels.
2. Thoroughly clean and degrease the hub with a nonflammable solvent.
3. It is recommended that the hub be heated evenly throughout in an oven or in boiling water to 175-215°F. See below for an alternative method.
4. Remove the hub from the oven or water and quickly press out the bearing cup. Take care to avoid damage to the bearing cup bore and shoulder. (*Variations within tolerances of materials and oven temperatures may allow the bearing cup to drop in and out easily*).

Alternate Procedure:

Use an electric welder to weld a large bead around the bearing surface of the steel cup. Do not spatter weld on to the hub. Let the assembly cool, or quench it in water. The weld will cause the cup to shrink enough to allow it to be easily removed.

5. To replace the bearing cup, heat the hub evenly as in step 3 above.
6. Remove the hub from the oven or water quickly and press in the new bearing cup. Be sure the cup is properly aligned and fully seated. Take care to avoid damage to the bearing bore and shoulder. Be sure both cups are fully seated before installing the hub. If the cup is being pressed into an unheated hub, additional installation force will be required. To reduce the installation force the cup can be put in a freezer for an hour prior to installation.

Seal Replacement

1. The seal should be replaced every time the hub is removed from the spindle.
2. Follow the seal manufacturers instructions for removing and installing a new seal. Use the tools recommended by the seal manufacturer.

Con Met PreSet Hubs.

INSTALLATION:

1. All PreSet hubs are shipped ready for installation with a thin film of lubricant on the bearings. (Additional lubricant will have to be added after installation). Use only clean parts for service.
2. Install the PreSet hub all the way onto the spindle. Allow the temporary plastic alignment sleeve, if present, to be pushed out of the PreSet hub as it is installed onto the spindle. If an alignment sleeve was present, it can be discarded.
Once the hub is on the spindle, **Never remove the outer bearing.** Removing the outer bearing may cause the seal to become misaligned, resulting in premature seal failure.
3. Remove the temporary plastic bearing cover and install the spindle nut. Torque the spindle nut to 400 Nm. (300 lbft.) Do not back off the spindle nut. It may be necessary to tighten the spindle nut a little more to allow the alignment of the lock washer with the spindle nut. Install the lock tab washer and outer lock nut, toque the lock nut to 280 Nm. (200 lbft.)
4. Install the hub cap on the hub. The hub cap bolt holes must be free of debris, such as silicon gasket sealer, to ensure that the bolts will tighten properly to avoid leaks. Always use new gaskets. Use the recommended lubricants to fill the hub, with oil lubricated hubs it may be necessary to add oil to the hub three or four times to assure the correct oil volume.

Con Met PreSet Hub Installation

Torque Applied to all Spindle Nuts	
300 lb.ft. (400 Nm.) LOCK IN PLACE - NO BACK OFF	
If the locking device is not aligned and locked at 300 lb.ft. (400 Nm.) advance the nut to the next position that allows the nut to lock. Check the nut and verify that the locking system is engaged before installing the hub cap.	

PART NUMBER IDENTIFICATION

Description	York Part No.	Timken Part No.
Outer Bearing Cone	79.787955/01	NP899357
Outer Bearing Cup	79.787955/02	NP026773
Inner Bearing Cone	79.787956/01	NP965350
Inner Bearing Cup	79.787956/02	NP503727
PreSet Bearing Spacer	79.104144	



CREWSON BRUNNER

AUTOSLACK FIELD INSPECTION

No Autoslack can compensate for braking System Deficiencies. The brakes should be in good operating condition and be well maintained. Crewson Brunner Autoslacks should not require manual adjustment except for initial installation and brake relines. The Autoslack unit must be installed with a Crewson brunner clevis and template. **By constantly manually readjusting the Autoslack Adjuster, the internal clutch life can be shortened.**

AUTOSLACK ON THE VEHICLE

Free Stroke

Free stroke is the distance the slack arm moves in order to make the brake shoes contact the drum. Move the slack arm with a small pry bar and measure the movement distance. This distance should be 10mm to 16mm.

If free stroke is greater than 16mm, check the foundation brake components. Repair and replace as needed.

Push Rod Power Stroke

Measure the power stroke (the difference between when the brake is off and when air is fully applied) at 80 to 90 psi application pressure.

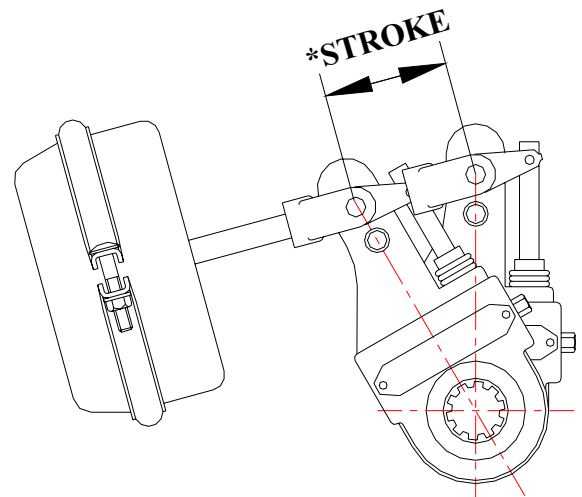
*** This distance (Stroke) must be less than or equal to the maximum in the chart below.**

Chamber Types

16, 20, 24
30
36

Adjusted stroke

less than or equal to 44mm.
less than or equal to 51mm.
less than or equal to 57mm.



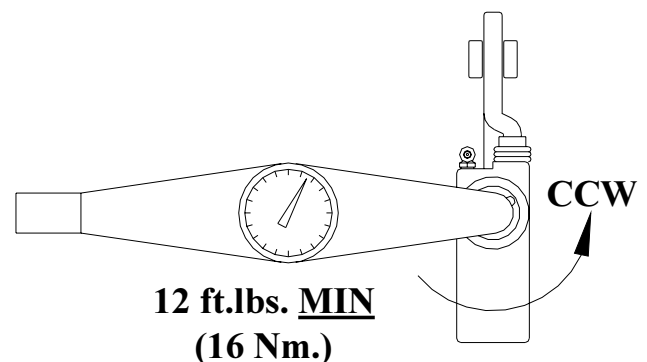
*** If the stroke is correct the Autoslack is operating properly. No other tests are necessary.**

Back Torque

With the Autoslack correctly installed on the axle, Back Torque (CCW Rotation) can be measured. Using a torque wrench, turn the Adjusting Hex CCW. Back Torque will increase to a peak value, then return to zero as the ratchet clutch disengages.

Replace Autoslack if the Back (CCW) Torque reading is less than 12 ft.lbs. (16 Nm.)

Rotate the Hex shaft a maximum of 5 clicks (ratchet teeth) while taking torque readings.



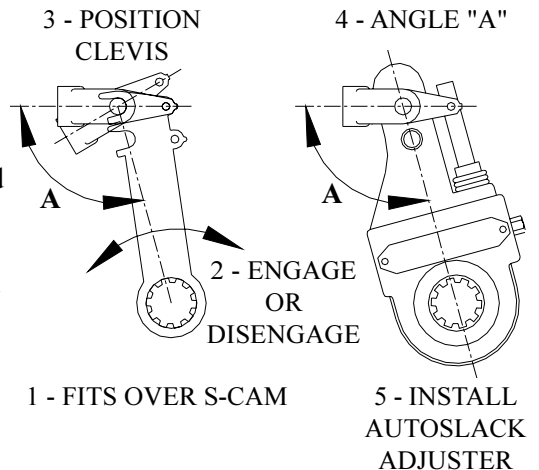
AUTOSLACK REMOVED FROM VEHICLE:

Crewson Brunner Autoslacks are fully lubricated at the factory. A grease fitting is provided for normal maintenance.

Crewson Brunner Autoslacks can not be disassembled in the field. Never tamper with the units factory settings.

Verify Autoslacks Set Up

1. Select the correct template for the spline size and armhole location.
2. Fit Installation Template over S-Cam and put 1/2" pin into clevis.
3. Swing Template to engage 1/2" pin.
4. Screw clevis CW or CCW on push rod until 1/4" holes in clevis and template line up.
5. Template now indicates correct set up angle "A".
6. Remove template and 1/2" pin. Install Autoslack adjuster on S-Cam and turn the Hex nut CW until 1/2" and 1/4" holes line up with the clevis.
7. Install and secure clevis pins. Turn nut CW until shoes contact the brake drum.
8. Back off Hex nut one half turn CCW to complete setup.

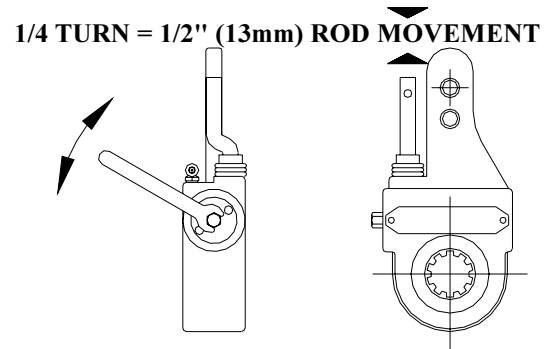


Actuation Rod Movement

The Actuation rod will move as a slight force is used to turn the adjusting Shaft hex. 1/4 of a turn will cause full movement of the Actuation Rod. Full movement of the Actuation rod is about 1/2".

- * **Clockwise (CW) movement of the Adjusting Shaft Hex will move the Actuation Rod into the Slack Body.**
- * **Counter Clockwise (CCW) movement of the Adjusting Shaft Hex will move the Actuation Rod out of the Slack Body.**

Replace Autoslack if Actuation rod does not move.

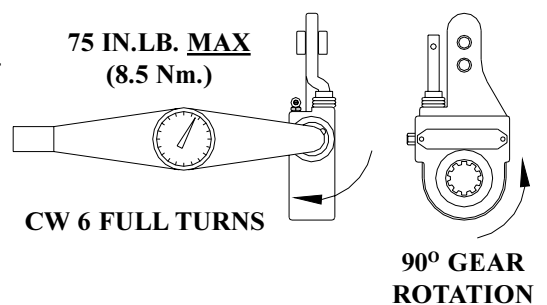


Gear Movement & Front Torque

Using a torque wrench, rotate Adjusting hex nut through 6 full revolutions. Front Torque will increase to a peak value then return to zero several times on each revolution.

- * The spline should rotate about 90 degrees.
- * The Front (CW) Torque should be less than 75 in.lbs. (8.5 Nm.)

Replace Autoslack if spline does not rotate or if torque readings are greater than 75 in.lbs. (8.5Nm.)



Back Torque

Assemble a crewson brunner clevis to the Autoslack Body and the Actuation Rod with the clevis pins. Using a torque wrench, turn the adjusting Shaft Hex CCW. Back torque will increase to a peak value, then return to zero as the ratchet clutch disengages.

Replace Autoslack if the Back (CCW) Torque reading is less than 12 ft.lbs. (16 Nm.)

Rotate the Hex shaft a maximum of 5 clicks (ratchet teeth) while taking torque readings.

